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FUNCTION OF GLUTATHIONE IN *ARABIDOPSIS* IMMUNITY AND GLUCOSINOLATE METABOLISM

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Induced defense responses in plants usually involve biosynthesis of antimicrobial metabolites and their targeted secretion at the site of pathogen contact. Our recent study on the model plant *Arabidopsis* revealed a novel pathogen triggered metabolism pathway for glucosinolates, amino acid-derived thio-glucosides characteristic for crucifer plants that so far were mainly known as insect deterrents (Bednarek *et al.* 2009). This pathway requires at least two enzymatic components: CYP81F2 P450 monooxygenase and PEN2-myrosinase. CYP81F2 is essential for the pathogen-induced accumulation of 4-methoxyindol-3-ylmethyl glucosinolate, which in turn is activated by PEN2 for antifungal defense. In addition, our former analysis suggested contribution of glutathione to the PEN2/CYP81F2-defence pathway (Bednarek et al., 2009). This finding prompted us to investigate in detail the mechanisms underlying this putative glutathione immune function. Here we report on the *Arabidopsis* glutathione-S-transferase that is crucial for the pathogen triggered indole glucosinolate metabolism. We provide evidence that this particular glutathione transferase constitutes an indispensable component of the PEN2/CYP81F2 immune pathway and mediates resistance towards biotrophic, hemibiotrophic and necrotrophic fungal pathogens.

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